ABSTRACT OF THE DISCLOSURE

An enclosed direct oxidation fuel cell system is provided. The system is sealed with one or more layers of a plastic enclosure that conforms directly to the shape of the fuel cell system. The enclosure is substantially comprised of one or more layers of materials that are non-reactive with the fuel substance used in the fuel cell. In accordance with one aspect of the invention, one of the materials is a plastic film material that provides a good seal to substantially prevent liquids from escaping from the system. Yet, the enclosure is lightweight and conforms substantially to the exterior body of the fuel cell system so that it adds little or no bulk to the fuel cell system. The enclosure also prevents water from leaking out of the system. The enclosure materials may include color-changing properties so that in the event of a leak, it is visually apparent that liquid is in contact with the enclosure.